

IN THE CLAIMS

What is claimed is:

- 1 1. A article of manufacture including one or more machine-accessible medium
2 having executable code stored thereon which, when executed by a machine,
3 causes the machine to:
4 receive one or more semaphore modification requests from one or more
5 requesting devices;
6 identify an ownership state of a semaphore corresponding to the one or
7 more semaphore modification requests;
8 arbitrate to identify a first modification request of the one or more
9 semaphore modification requests, the first modification request from a first
10 requesting device;
11 allow the first modification request to succeed if the identified ownership
12 state corresponds to the first requesting device; and
13 allow the first modification request to succeed if the identified ownership
14 state corresponds to no ownership.

- 1 2. The article of manufacture recited in Claim 1 which, when executed by a
2 machine, further causes the machine to
3 decline a second modification request of the one or more semaphore
4 modification requests.

- 1 3. The article of manufacture recited in Claim 1 which, when executed by a
2 machine, further causes the machine to:
3 receive a semaphore read requests from one of the one or more

means for receiving one or more semaphore modification requests from one or more requesting devices;

means for identifying an ownership state of a semaphore corresponding to the one or more semaphore modification requests;

means for arbitrating to identify a first modification request of the one or more semaphore modification requests, the first modification request from a first requesting device;

means for granting the first modification request if the identified ownership state corresponds to the first requesting device; and

means for granting the first modification request if the identified ownership state corresponds to no owner.

15. The multiprocessor system recited in Claim 14 further comprising:

means for receiving a semaphore read requests from one of the one or more requesting devices;

means for transmitting the identified ownership state in response to the semaphore read request; and

means for allowing the first requesting device to access a shared resource.

16. The multiprocessor system recited in Claim 14 wherein the one or more requesting devices are fabricated on a single die.

17. A multiprocessor comprising:

a logical plurality of processors;

3 a resource scheduling device coupled to one or more of the logical
4 plurality of processors to provide access to a set of resources;
5 a shared resource of the set of resources having a semaphore;
6 a semaphore checker coupled to the resource scheduling device and to
7 the semaphore to:

8 receive one or more semaphore modification requests from the one or
9 more of the logical plurality of processors,
10 identify an ownership state of the semaphore,
11 arbitrate the one or more semaphore modification requests and identify a
12 first modification request from a first requesting processor of the one or more
13 of the logical plurality of processors,
14 allow the first modification request to succeed if the identified ownership
15 state corresponds to the first requesting processor; and
16 allow the first modification request to succeed if the identified ownership
17 state corresponds to no ownership.

1 18. The multiprocessor recited in Claim 17 wherein the semaphore checker is
2 further to:

3 decline a second modification request of the one or more semaphore
4 modification requests.

1 19. The multiprocessor recited in Claim 17 wherein the semaphore checker is
2 further to:

3 receive a semaphore read requests from one of the one or more of the
4 logical plurality of processors;
5 transmit the identified ownership state in response to the semaphore read

6 request; and
7 allow the first requesting processor to access a shared resource.

1 20. The multiprocessor recited in Claim 17 wherein each of the one or more
2 semaphore modification requests received identify a corresponding
3 requesting processor of the one or more of the logical plurality of processors.

1 21. The multiprocessor recited in Claim 17 wherein the multiprocessor is
2 fabricated on a single die.

1 22. The multiprocessor recited in Claim 17 wherein arbitration is resolved on a
2 round-robin basis.

1 23. The multiprocessor recited in Claim 17 wherein arbitration is resolved on a
2 priority basis.

1 24. An apparatus comprising:
2 a register to access a shared resource of a set of resources;
3 a semaphore corresponding to the shared resource; and
4 a semaphore checker coupled to the semaphore to allow access to the
5 shared resource through the register.

1 25. The apparatus of Claim 24 wherein the semaphore checker is further to:
2 receive one or more semaphore modification requests from one or more
3 of a logical plurality of processing devices,
4 identify an ownership state of the semaphore,

